

CLAIMS

What is claimed is:

1. A modified copolymer latex binder for polyester fibers comprising at least 10 wt% - 90 wt% styrene-butadiene and a corresponding amount of 90 wt% - 10 wt% of a urea-formaldehyde resin wherein the urea-formaldehyde resin is prepared by adding a short-stop agent to the urea-formaldehyde resin reaction system.
2. The modified copolymer latex binder of claim 1 wherein the latex binder comprises about 70 wt% styrene-butadiene and about 30 wt% of a urea-formaldehyde resin.
3. The modified copolymer latex binder of claim 2 wherein the styrene-butadiene latex comprises about 10-90 wt% styrene and about 90-10 wt% butadiene modified by a cross-linking agent.
4. The modified copolymer latex binder of claim 3 wherein the styrene-butadiene latex comprises about 30-70 wt% styrene and about 70-30 wt% butadiene modified by a cross-linking agent.
5. The modified copolymer latex binder of claim 3 wherein the styrene-butadiene latex comprises about 40 wt% styrene and about 60 wt% butadiene modified by a cross-linking agent.
6. A sheet comprising a single layer of nonwoven or woven polyester mat coated with a binder composition including at least 10 wt% - 90 wt% styrene-butadiene latex and 90 wt% - 10 wt% urea-formaldehyde wherein the urea-formaldehyde resin is prepared by adding a short-stop agent to the urea-formaldehyde resin reaction system.
7. The sheet of claim 6 wherein the latex binder comprises about 70 wt% styrene-butadiene and about 30 wt% of a urea-formaldehyde resin.

8. The sheet of claim 6 wherein the styrene-butadiene latex comprises about 10-90 wt% styrene and about 90-10 wt% butadiene modified by a cross-linking agent.

9. The sheet of claim 6 wherein the styrene-butadiene latex comprises about 30-70 wt% styrene and about 70-30 wt% butadiene modified by a cross-linking agent.

10. The sheet of claim 6 wherein the styrene-butadiene latex comprises about 40 wt% styrene and about 60 wt% butadiene modified by a cross-linking agent.

11. A roofing shingle, comprising:

an asphalt-coated polyester mat embedded with granules, said polyester mat comprising a plurality polyester fibers bonded with a modified styrene-butadiene latex modified with a urea-formaldehyde resin, wherein the urea-formaldehyde resin is prepared by adding a short-stop agent to the urea-formaldehyde resin reaction system.

5 12. The roofing shingle of claim 11 wherein the latex comprises about 70 wt% styrene-butadiene and about 30 wt% of a urea-formaldehyde resin.

13. The roofing shingle of claim 12 wherein the latex comprises about 10-90 wt% styrene and about 90-10 wt% butadiene modified by a cross-linking agent.

14. The roofing shingle of claim 13 wherein the latex comprises about 30-70 wt% styrene and about 70-30 wt% butadiene modified by a cross-linking agent.

15. The roofing shingle of claim 13 wherein the latex comprises about 40 wt% styrene and about 60 wt% butadiene modified by a cross-linking agent.